

**REMARKS**

This is in response to the Office Action of April 5, 2007. Claim 1 is amended based upon disclosure throughout the specification and drawings to more particularly point out Applicants' invention. See generally e.g. pages 5, 11-15, 17, 18, and 26. See also the following table:

<i>Claim language</i>	<i>Basis in specification</i>
first obtaining means for obtaining an actual NOx concentration at an inlet of said NOx occlusion catalyst	Page 12, line 19 - page 13, line 2 (particularly "map provided in the ECU 4")
second obtaining means for obtaining an actual NOx concentration at an outlet of said NOx occlusion catalyst,	Page 11, line 27 - page 12, line 4 (particularly "NOx sensor 3")
and actual NOx purification rate calculating means for calculating an actual purification rate of said NOx catalyst sequentially based on a ratio of the actual NOx concentration at said inlet to the actual NOx concentration at said outlet	Page 13, lines 11-22 (particularly "the equation (1) stored in the ECU 4")
which include an estimate NOx purification rate	Page 14, lines 16 - page 15, line 3 (particularly "the equation (2)")
to become said estimated NOx purification rate calculated by said polynomial equal to the latest actual NOx purification rate calculated by said actual NOx purification rate calculating means	Page 15, line 22 - page 16, line 12

Non-narrowing typographical amendments are made to claims 1, 6, and 10. No new matter is introduced. Claims 1-14 remain pending in the application.

Claims 1, 6, and 11-13 were rejected under 35 U.S.C. § 102(e) as being anticipated by US 6,826,902 B2 to Sun et al. ("Sun"). Office Action, pages 2-4. Claims 2-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sun in view of US 2004/0261397 A1 to Yang ("Yang"). Office Action, pages 4-5. Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sun in view of Yang and "applicant's admitted prior art". Office Action, page 6. Claims 7-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sun in view of Yang. Office Action, pages 6-8. Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sun in view of "applicant's admitted prior art". Office Action, page 8. Each of these rejections is respectfully traversed.

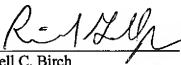
The present invention is characterized by calculating an actual NOx purification rate “r” during engine operation sequentially by the formula ‘ $r = \text{actual NOx concentration at an outlet of an NOx occlusion catalyst} / \text{actual NOx concentration at an inlet of said catalyst}$ ’, and then correcting each coefficient of the polynomial on the basis of the latest actual NOx purification rate “r” sequentially by feeding back said actual NOx purification rate to the polynomial, obtaining an NOx occlusion amount [x].

To reiterate, as taught e.g. in lines 5-15 on page 5 of the specification, the “estimating method of NOx occlusion amount of the present invention is a method for estimating NOx occlusion amount of a NOx occlusion catalyst interposed in an exhaust passage in an engine, characterized in comprising the steps of: estimating the NOx occlusion amount by using a polynomial reflected with NOx occlusion characteristics of the NOx occlusion catalyst, and correcting each coefficient of the polynomial sequentially on the basis of NOx purification rates actually measured.” In contrast, Sun merely sets coefficients c1 and c2 based on experimental data and applies the values. Therefore, the present invention is not only novel but is also unobvious based upon the Sun disclosure.

In view of the above amendments and remarks, Applicants believe that the present application is in condition for allowance, which action is earnestly solicited. If there are any questions, please contact Richard Gallagher (Reg. No. 28,781) at (703) 205-8008.

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Respectfully submitted,

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